# Earth Report / Alternative Energy Sources/ Hands on /BBC Documentary

## RENEWABLE ENERGY

Part one**: Full seam ahead**

### Pre-watching activity

I. In pairs/groups discuss these questions:

1. Do you have electric light at home?
2. Do you have tap drinking water at home?
3. Which electrical devices do you use every day? Can you imagine your life without them?
4. Which are the conventional methods of generating power in the Czech Republic?
5. Which are the alternative methods of generating power you have heard of?

II. Discuss the meaning of these words. Do you know the meaning of some of them?

|  |  |  |  |
| --- | --- | --- | --- |
| **Tuscany** | **treasure** | **gem** | **volcano** |
| **steaming water** | **to capture** | **digging wells** | **power plant** |
| **tidy profit** | **high pressure steam** | **depth** | **pipes carrying steam** |
| **to maintain constant temperature** | **to generate sustainable energy** | **geothermic** | **crater** |

### Watching activities

1. Answer these questions.
   1. Where is Tuscany?
   2. What kind of country is it from the geographical point of view?
   3. What kind of renewable energy can be generated there and why?
   4. What is situated beneath the ground surface in Tuscany?
   5. How deep is the steam?
   6. What is a typical winter weather in Tuscany?
   7. What technology has been developed to safeguard the future of the geothermal power in Tuscany?
   8. How many countries the geothermal energy is being used in today?
2. Complete the sentences with the words used in the video.
   1. High-pressure steam is used to power ................................ Italian households.
   2. Cooler steam is used for district heating of ............................... in the area.
   3. Steam can heat your household ................... hours a day.
   4. The abundance of steam has also created ............... in the region.
   5. Condensed steam from turbines is recycled by .............................. it back underground.
   6. For this technique you need a water resource available ...................... .

# *Post-watching activity*

In your words describe how the steam energy is generated, used and recycled in Tuscany.

Part two: **Sun slate**

# *Pre-watching activity*

Study the new vocabulary and try to explain it in English

|  |  |  |
| --- | --- | --- |
| **solar panel** | **slate** | **entrepreneur** |
| **jeopardise** | **benefit** | **national grid** |
| **miraculous** | **detergent** | **funds** |

### Watching activity

I. Chose the correct expressions as you heard them in the video.

1. This story happened in *Dominican Republic/Mexico*.
2. Dominican Republic is a very *poor/rich* country.
3. Electricity is a very *big/no* problem there.
4. Before the solar panels were installed, the local people used *kerosene/oil* lamps.
5. In the “kerosene time” the people *had/didn’t have to* use more detergents, more water and more money for the batteries.
6. In the “kerosene period” the young people were *fleeing to the cities/staying in the village.*
7. For the installation of the solar system the villagers have paid 2000 pesos, and they will pay *100/200* pesos monthly until the system is paid off.
8. The system of solar panels will last for *25/35* years.
9. A water pump in the village even provides tap *drinking/non-drinking* water.
10. The problem with this kind of energy is *funds/maintenance*.
11. Due to the lack of money, the project cannot *expand/finish*.

II. What, in your opinion, is the meaning of this statement?

*The very future of the community is in doubt.*

### Post-watching activity

In pairs/groups discuss the pros and cons of the project you have just watched.

Part three: **Donuts for diesel**

### Pre-watching activity

Study the new vocabulary and discuss the meanings in English.

|  |  |  |  |
| --- | --- | --- | --- |
| **English cuisine** | **dish** | **to get rid of** | **fossil fuel** |
| **lorry** | **bio-diesel** | **donut** | **urgent challenge** |
| **pioneering technique** | **waste cooking fat** | **to converge** | **virtually the same** |
| **sustainable** | **vehicle fuel** | **to blend** | **drawback** |

### Watching activities

1. Decide whether these statements are true or false.
   1. The most popular British meal is fish and rice.
   2. As a result of preparing a lot of the Britons’ favourite dish, there is a lot of used fat which is a big environmental problem to be gotten rid of.
   3. The possible solution is turning the used fat into bio-diesel.
   4. ASDA is a supermarket chain which sells 39 million chickens a year.
   5. ASDA stores its 138 000 litres of waste fat and sends it to a bio-diesel experimental plant.
   6. Bio-diesel burns more cleanly than fossil fuels.
   7. In fact there is a big difference between the energy contents of a litre of petrol or diesel and a litre of vegetable oil or bio-diesel.
   8. Bio-diesel reduces quarter as much as carbon monoxide as ordinary diesel.
   9. The smell of burnt bio-diesel is virtually the same as the smell of traditional diesel.
2. Answer these questions.
   1. What fuel did Rudolf Diesel, the inventor of diesel engine, use to run his engine?
   2. Which problems does bio-diesel solve?
   3. What is a drawback of this fuel?
   4. Which countries produce and use bio-diesel?

### Post-watching activity

Put down a 10-sentence summary of what you have just watched.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Part four: **Lighting up**

### Pre-watching activity

Do you know some of these words? Try to explain them in English.

|  |  |  |  |
| --- | --- | --- | --- |
| **tumbling streams** | **abundance** | **innovative** | **harnessing the potential** |
| **remote communities** | **rural population** | **charging a battery** | **hydropower system** |
| **to check on progress** | **powerhouse** | **intake pipe** | **micro-hydro project** |
| **valve** | **costly problem** | **time-consuming** | **kerosene lamp** |

### Watching activity

Decide if these statements are true or false.

1. There are a lot of water streams in Kenya which can serve as a renewable source of energy.
2. Basic everyday duties become a costly and time-consuming problem for those who live without the electric energy.
3. There are several villages in Kenya that have run a new project of generating

hydropower.

1. The hydropower system is rather expensive.
2. The hydropower system consists of an intake pipe, a turbine and a valve.

### Post-watching activity

In groups/pairs try to find a Czech region, where a similar project could be installed.

Part five: **Cold chain**

### Pre-watching activity

Discuss the meanings of these words in English.

|  |  |  |  |
| --- | --- | --- | --- |
| **immunization programmes** | **vaccine** | **to refrigerate** | **unreliable** |
| **cleaner energy sources** | **solar fridges** | **liable** | **to maintain** |
| **treatment** | **installation** | **respectable technology** | **destination** |

### Watching activity

Answer these questions.

1. How many children’s lives are saved by immunizationprogrammes in the world every year?
2. What is a global challenge in relation to vaccination?
3. What is a cold chain?
4. Which cooling technology is supported by UNICEF?
5. What are the pros and cons of this refrigerating technology?
6. What is the cost of the solar fridge?
7. What does the price depend on?
8. What does less sunshine mean in this regard?
9. How many days can a full battery work?
10. Does there have to be sunshine to recharge the battery?
11. Is this technology frequently or rarely used in the world?

**Teacher’s Answer Key**

#### Full steam ahead

Answer the questions.

1. In Italy
2. volcanic
3. steam
4. underground lakes
5. 5 km
6. windy, cold, st. Snow
7. re-injecting the water back to the hot reservoirs
8. 4

Complete the sentences.

1. 2 millions
2. 50 000
3. 24
4. jobs
5. injecting
6. nearby

##### Sun slate

###### Decide which is true

1. Dominican Republic
2. poor
3. a big problem
4. kerosene lamps
5. had to use
6. fleeing to the cities
7. 100 pesos
8. 25 years
9. tap drinking water
10. funds
11. expand

Pros of the project – emigrants are returning back home

Cons – inability to spend or invest money as it is a poor region.

##### Donuts for diesel

True/false

1. F /chips
2. T
3. T
4. F/58
5. T
6. T
7. F
8. F/half
9. F/popcorn

Answer these questions

1. peanut oil
2. car fuel and waste disposal problem
3. run fewer kilometres with bio-diesel than with fossil fuel
4. Britain, Germany, France

##### Lighting up

True/false

1. T
2. T
3. F /just one village
4. F
5. F /a generator

##### Cold chain

Answer these questions

1. 3 – 4 millions
2. keeping vaccine cold all way long
3. refrigerating the vaccines from the factory to the injecting
4. solar fridges
5. more liable, installation is not cheap, maintenance is not easy
6. from 3000 to 5000US$
7. destination and solar capacity of the region
8. more modules
9. 5 days
10. no
11. yes