**Exercise.1**

Ответьтенавопросы:

1. How can electricity be generated?

Electricity can be generated by a variety of technologies that ultimately depend on the effects of solar radiation.

1. How can windmills and waterfalls be used?

Windmills and waterfalls (themselves very old sources of mechanical energy) can be used to turn turbines to generate electricity.

1. Are most existing windmill installations relatively small?

Yes, most existing windmill installations are relatively small

1. Why are windmills usually arranged in a crisscross configuration?

Windmills usually arranged in a crisscross configuration because that takes advantage of wind shifts.

1. Does most electricity from hydroelectric installations come from giant dams?

Yes, most electricity from hydroelectric installations come from giant dams

1. Have many of the sites suitable for large dams already been used?

Yes, many of the sites suitable for large dams have already been tapped

1. What can you tell about the small dams in the 1970s?

during the 1970s small dams used years earlier for mechanical energy were retrofitted to generate electricity.

1. Are small dams used now to generate electricity?

No, small dams are not using now to generate electricity

1. Are large-scale hydro projects still being constructed in many developingcountries?

 Large-scale hydro projects are still being pursued in many developing countries

1. What is the simplest form of solar-powered electricity generation?

The simplest form of solar-powered electricity generation is the use of a range of collectors that heat water to produce steam to turn a turbine

1. What is the volume of power produced annually on solar powered stations?

Several of these facilities are in existence, producing approximately 200 megawatts of power

1. Where are photovoltaic cells used currently?

Photovoltaic cells, which convert sunlight directly into electricity, are currently being used for remote locations such as orbiting space satellites, unattended railroad crossings, and irrigation pumps

1. Can you explain the principle of photovoltaic cells operation?

The principle of photovoltaic cells operation consists in convert sunlight directly into electricity

1. Why do you think that commercial development of still other methods seemsfar in the future?

Commercial development of still other methods seems far in the future because progress is needed to lower costs before widespread use is possible

1. Does ocean thermal conversion generate electricity on offshore platforms?

Yes, ocean thermal conversion generates electricity on offshore platforms

1. Can you explain the principle of power generation in the process of oceanthermal conversion?

Ocean thermal conversion (OTC) generates electricity on offshore platforms; a turbine is turned by the power generated when cold seawater moves from great depths up to a warm surface

1. What do you think about using space satellites to beam electricity viamicrowaves down to the earth?

Today still highly exploratory is the notion of using space satellites to beam electricity via microwaves down to the earth.

**Exercise.2**

Найдите в тексте английские эквиваленты следующих слов и выражений:

Разнообразные технологии - varietyoftechnologies;  солнечная радиация - solarradiation;  ветряные мельницы и водопады–windmillandwaterfall;  очень старый источник механической энергии - oldsourceofmechanicalenergy;  может быть использован для вращения турбин–canbeusedtoturn a turbine;  большинство существующих ветряных установок - mostexistingwindmill;  конфигурация - configuration;  преимущество - advantage; гидроэнергетические установки - hydroelectricinstallations;  высотные плотины - giantdams;  малые плотины - smalldams; цивилизованные страны - industrializednations; механическая энергия - mechanicalenergy;  развивающиеся страны - developingcountries;  наиболее простая форма - thesimplestform; выработка солнечной энергии - solar-poweredelectricitygeneration; использование ряда коллекторов - theuseof a rangeofcollectors;  производить пар - toproducesteam; несколько существующих установок - severalofthesefacilitiesareinexistence;  приблизительно 200 мегаватт энергии - approximately 200 megawattsofpower; высокотехнологичные варианты - high-technologyoptions;  превращать солнечный свет напрямую в электроэнергию - convertsunlightdirectlyintoelectricity;  отдаленные местности - remotelocation; космические спутники - orbitingspacesatellite;  ирригационные насосы - irrigationpumps;  понижать цены - tolowcosts;  широкое применение – widespreaduse;  оффшорные платформы - offshoreplatforms;  морская вода - seawater; микроволны - microwaves.

**Exercise.3**

Закончите предложения, подходящими по смыслу словами или словосочетаниями:

Windmills and waterfalls can be usedc) to generate electricity.

Most existing windmill installations are relatively c) huge.

Most electricity from hydroelectric installations comes from b) giant dams

Many of the sites suitable for large dams have already been b) tapped

Large-scale hydro projects are still being constructed in b) developing countries

Solar-powered electricity generation is used to c) heat water

Solar powered facilities produce approximately b) 200 megawatts of power.

Photovoltaic cells are currently being used for b) remote locations

**Exercise.4**

Составьте предложения, используя данные слова и словосочетания:

1. Windmills and waterfalls, themselves very old sources of mechanical energy
2. Windmillsandwaterfallscanbeusedtoturnturbinestogenerateelectricity
3. Mostelectricityfromhydroelectricinstallationscomesfromgiantdams
4. Large-scalehydroprojectsarestillbeingpursuedinmanydevelopingcountries
5. Thesimplestformofsolar-poweredelectricitygenerationistheuseof a rangeofcollectorsthatheatwatertoproducesteamtoturn a turbine.
6. Photovoltaiccellsconvertssunlightdirectlyintoelectricity
7. Photovoltaic cells are currently being used for remote locations such as orbiting space satellites
8. Oceanthermalconversiongenerateselectricityonoffshoreplatforms;

**Exercise.5**

Переведите на английский язык следующие предложения:

1. Электроэнергия генерируется с использованием различных технологий.

Electricitycanbegeneratedby a varietyoftechnologies

1. Ветряные мельницы и водопады являются наиболее древнимиисточниками выработки механической энергии.

Windmillsandwaterfallsareveryoldsourcesofmechanicalenergy

1. Все известные ветряные мельницы довольно небольшие по размерам.

Mostexistingwindmillinstallationsarerelativelysmall

1. Большинство гидроэнергетических установок значительны по своимразмерам.

Most electricity from hydroelectric installations comes from giant dams

1. Крупномасштабные проекты гидростанций до сих пор осуществляются вразвивающихся странах.

Large-scalehydroprojectsarestillbeingpursuedinmanydevelopingcountries

1. Наиболее простой проект генерирования солнечной энергии состоит изряда коллекторов, которые нагревают воду и вырабатывают пар длявращения турбин.

Thesimplestformofsolar-poweredelectricitygenerationistheuseof a rangeofcollectorsthatheatwatertoproducesteamtoturn a turbine.

1. В настоящее время работают несколько солнечных коллекторов, которыевырабатывают приблизительно 200 мегаватт часов электроэнергии.

Severalofthesefacilitiesareinexistence, producingapproximately 200 megawattsofpower.

1. Фотоэлементы с запирающим слоем превращают солнечную энергиинапрямую в электрическую.

Photovoltaiccellsconvertssunlightdirectlyintoelectricity

1. Фотоэлементы с запирающим слоем применяются на орбитальныхспутниках.

Photovoltaiccellsarecurrentlybeingusedforremotelocationssuchasorbitingspacesatellites