

In this regard, it is advisable for customs administrations to invest in human resources, increasing employees' understanding of the importance of data analysis, given its critical role in the modernization of the customs administration. In particular, both managers and line officers of customs authorities are called upon to consistently develop the necessary skills, using the potential of data analysis and information technology to improve cross-border management.

Литература

1. Блинов, Н.М. Проектирование таможенной политики / Н.М. Блинов, В.Н. Иванов, В.Б. Кухаренко, А.Г. Пашинский. – М.: Книга и бизнес, 2001. – 328 с.
2. Кухаренко, В.Б. Модернизация таможенной службы. Монография / В.Б. Кухаренко. – М.: ИЦ «Классика», 2000. – 352 с.
3. Берков, В.Ф. Методология науки. Общие вопросы: учеб. пособие/ В.Ф. Берков. – Минск: РИВШ, 2009.–396 с.
4. The text of WTO Agreement on Trade Facilitation [Electronic resource]. – Mode of access: https://mc9.wto.org/system/files/documents/w8_0.pdf. – Date of access : 11.03.2021.
5. The text of the revised Kyoto Convention [Electronic resource]. – Mode of access: http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/conventions/pf_revised_kyoto_conv.aspx. – Date of access:10.03.2021.
6. Всемирная таможенная организация. Роль таможенной службы в 21-ом веке. [Электронный ресурс]. – Режим доступа: http://www.wcoomd.org/Public/Global/PDF/About%20us/legal%20instruments/Resolution/Role..._June%202008._.ashx?db=web. –Дата доступа: 17.03.2021.
7. WCO news, February, 2017 [Electronic resource]. – Mode of access: http://www.wcoomd.org/~media/wco/public/global/pdf/media/wco-news-magazines/wco_news_82.pdf. – Date of access: 19.03.2021.

ENERGY SOURCES, THEIR ADVANTAGES AND DISADVANTAGES ИСТОЧНИКИ ЭНЕРГИИ, ИХ ДОСТОИНСТВА И НЕДОСТАТКИ

Французёнок И.Н.

Научный руководитель: ст. преподаватель Гасова О.В.
Белорусский национальный технический университет

Using energy has been a key issue in the process of the development of our human society since the old times when people started to control fire. However,

one of the most prominent sources that changed the life of the whole world was the discovery of the most efficient energy source – the electricity.

However, what is the electricity? From the scientific point of view, the electricity is a particular set of physical phenomena, which is characterized by the presence, and the distinctive flow of electric charge. It is created when the small particles – electrons move between the atoms. This process creates an electric current. And this current is used to energize different kinds of equipment. Besides the obvious advantages, that electrical power brings to our life there is a definite set of threats that this modern technology causes. The process of electricity generation on different kinds of power stations often is not so harmless to the nature [1]. One of the most efficient but dangerous means of electricity generation is a nuclear power station. Though this is one of the most effective ways to generate electricity for the needs of the society, the disastrous catastrophes in Chernobyl and Fukushima showed us how dangerous nuclear power is.

One of the most popular alternative energy sources is wind energy. It has many benefits similar to those of fuel, however, it is renewable and no waste is produced. There are millions of wind energy installations all over the world already; nevertheless, nations still invest in this sphere to develop its technology.

However, even this type of energy has some disadvantages. For instance, wind turbines might be dangerous for some forms of wildlife.

Pros of wind power are:

- Wind power produces no pollution that can contaminate the environment, Since no chemical processes take place, as in the burning of fossil fuels, there are no harmful by-products left over.

- Since wind generation is a renewable source of energy, we will never run out of it.

- Wind farms can be built off-shore.

- Cons:

- Wind power is intermittent. Consistent wind is needed for continuous power generation. If wind speed decreases, the turbine lingers and less electricity is generated.

- Large wind farms can have a negative effect on the scenery [2].

- Solar power. Solar energy is used commonly for heating, cooking, and the production of electricity. Solar power works by trapping the sun's rays into solar cells where this sunlight is then converted into electricity. Additionally, solar power uses sunlight that hits solar thermal panels to convert sunlight to heat water or air. Solar energy has as well advantages as disadvantages.

- Solar power is a renewable resource. As long as the Sun exists, its energy will reach Earth.

- Solar power generation releases no water or air pollution, because there is no chemical reaction from the combustion of fuels.

– Solar energy can be used very efficiently for practical uses such as heating and lighting.

Cons of solar power. Solar power does not produce energy if the sun is not shining. Nighttime and cloudy days seriously limit the amount of energy produced. Solar power stations can be very expensive to build [2].

Geothermal Energy. Geothermal literally means «earth heat» Geothermal energy harnesses the heat energy present underneath the Earth. Hot rocks under the ground heat water to produce steam. When holes are drilled in the region, the steam that shoots up is purified and is used to drive turbines, which power electric generators.

Pros:

- If done correctly, geothermal energy produces no harmful by-products.
- Once a geothermal plant is built, it is generally self-sufficient energy wise.
- Geothermal power plants are usually small and have little effect on the natural landscape.

Cons:

- If done incorrectly, geothermal energy can produce pollutants.
- Improper drilling into the earth can release hazardous minerals and gases [2].

Natural gas has been used as an alternative source of energy for several decades already. It is currently used in cars to reduce carbon emissions. However, natural gas produces greenhouse gases even though the amount of them is less than from other kinds of fuel [1].

Energy from waves is not well-known among ordinary people but it proves another water benefit. This source of energy produces no waste and has a huge potential if used accurately. Nevertheless, wave energy is still not studied well enough so this source of energy is to be developed.

Hydroelectric energy appeared much earlier than other alternative sources of energy. It is renewable and extremely clean which means it does not pollute the air. There are also some unobvious but important benefits like flood control which is also provided by hydroelectric energy.

In our modern industrial society we consume vast amounts of energy to make our daily life more comfortable, productive and enjoyable. All of us use energy every day - for heat and light in living and working areas, cooking, transportation, manufacturing, and entertainment. The choices we make about how we use energy - turning machines off when we're not using them or choosing to buy energy efficient appliances - impact our environment and our lives.

We need to find alternative energy sources so that to reduce the harm that we do to our planet and economize current energy.

Литература

1. Nuclear power [Электронный ресурс]. - Режим доступа: <https://yznaika.com/notes/448-nuclear-power> – Дата доступа: 10.03.2021.

2. Energo-audit [Электронный ресурс]. - Режим доступа: <https://energo-audit.com/tehnologii-energoberezenia> - Дата доступа: 12.03.2021.

DEVELOPMENT OF ALTERNATIVE ENERGY IN REPUBLIC OF BELARUS РАЗВИТИЕ АЛЬТЕРНАТИВНОЙ ЭНЕРГИИ В РЕСПУБЛИКЕ БЕЛАРУСЬ

Темницкая Н.К.

Научный руководитель: ст. преподаватель Гасова О.В.
Белорусский национальный технический университет

First of all we will start with the definition of alternative energy. Alternative energy is complex of promising methods of obtaining, transferring and using energy. This complex is in demand because it doesn't cause significant harm to the environment. Alternative energy includes energy from the sun, wind, hydroelectric energy, biomass and others. And now let's look closer at each of them [3].

Solar energy. Energy from the sun is the form of radiation and light. Known as solar energy, this powerful and unlimited source of energy would offer us a very efficient alternative to oil, and it is free resource. This energy largely controls the climate and weather and is basis of life. Solar energy can be used to generate electricity and heat. Solar panels are necessary to obtain energy. Photovoltaic cells consist of one or two layers of a semi conducting material, usually silicon. When light shines on the cell it creates an electric field across the layers, causing electricity to flow. The greater the intensity of the light is, the greater the flow of electricity is. It is important to understand that it is not enough just to install solar panels on the roof of a building, it is necessary to use them correctly, take appropriate measures to maintain and improve them. Recently solar energy has been developed among European countries. Belarus followed example and began to develop this area too. Thus production increases. For example in 2015 – 13 MWatt, in 2019 – 154,3 MWatt [1].

Wind power is kinetic energy of moving air. In general terms, the potential for wind power generation depends on the following four factors:

- latitude and prevailing with patterns,
- relief and height,