

EUC Meeting
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7. 4. – 11. 4. 2014



Present sources of electrical energy

What is energy? A simple question with a difficult answer. Most often you will learn that it is the ability of mass to do work. Scientists assume that the energy in the universe exists in the same quantity since the Big Bang, only changing its form. We know mechanical, magnetic, thermal, nuclear, and electrical and many others.

For our life it is very important only the electric. With electricity shining our light work of home appliances, there is internet, flowing water, car rides, etc. Where, however, takes electricity? In the drawer? Electrical energy is transformed into another type of energy using generators. Most often converts mechanical energy that rotates a generator.

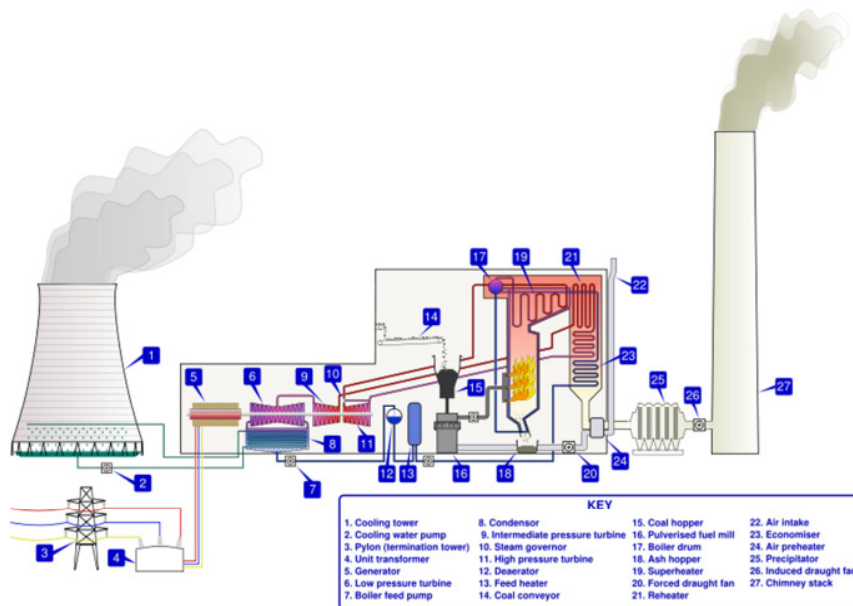
Mechanical energy used by people even in times past, for example in water or wind mills, today the wind energy and transforming the water in hydro and wind power plants just to power. Since the steam engine, where we can utilize the power of the steam to move, we can use this power as well as the production of electricity in thermal and nuclear power plants.



Sources of electricity:

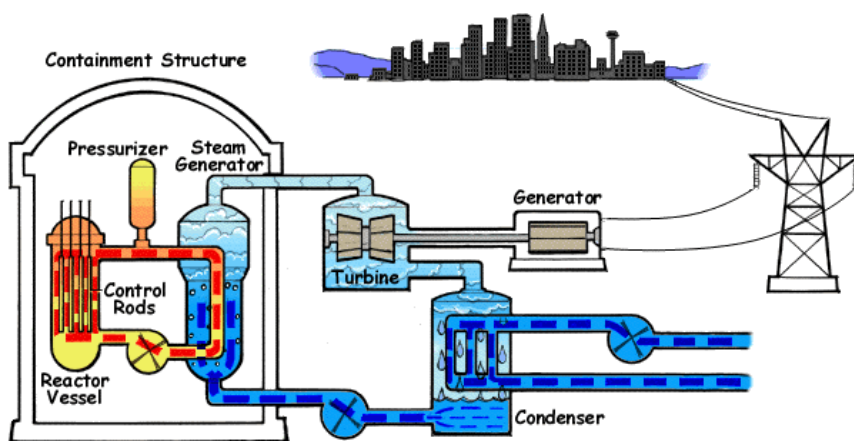
Thermal

Thermal power plants use to shake, power generator steam. To produce water steam, it is necessary to supply heat to the water. As a source of heat power plants using fossil fuels such as coal and natural gas, or biomass. After heating the resulting steam flows through the turbine and rotates the generator that generates electricity. It is the most common type of power peak production. Due to the limited amount of fossil fuels is their future uncertain.



Nuclear

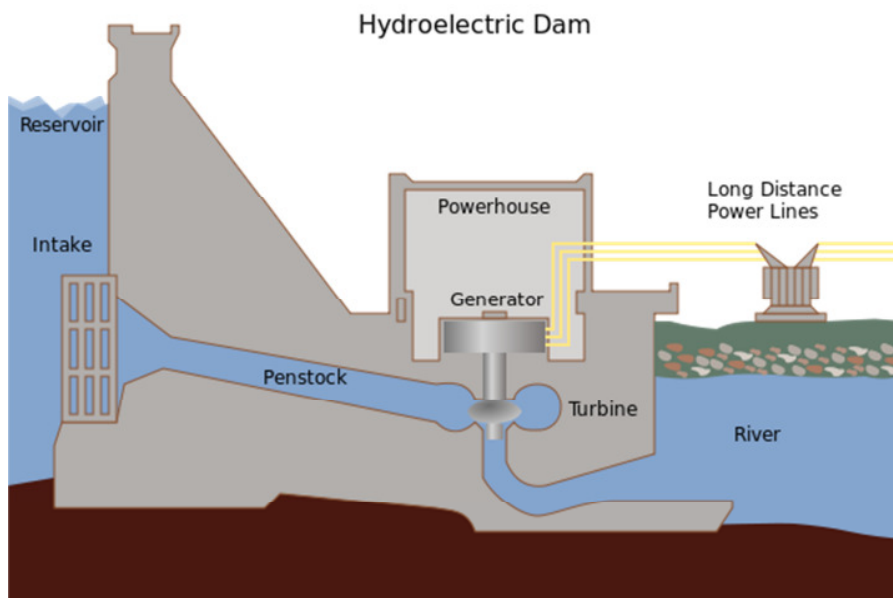
Nuclear power plant works on the same principle as heat, water heating are, however, uses a controlled fission reaction, which occurs when the necessary heat. This power supply is better for environment and even with a smaller number of nuclear power plants, the share of nuclear energy quite high. Uranus but we have a limited amount so in the future, this source is uncertain.



Aquatic

Hydroelectric power plants use the energy of flowing liquid that is fed to the turbines, which spins and spins the generators.

Hydroelectric power plants are dependent on water resources, but they are very environmentally friendly.



Wind

Wind power generator rotor is spinning flowing air similarly as in the case of windmills. This power supply is also very environmentally friendly, but it still depends on the weather.

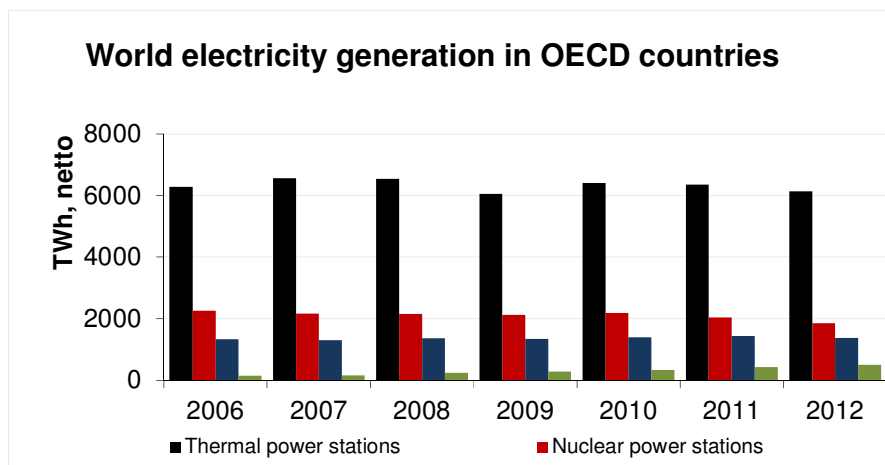
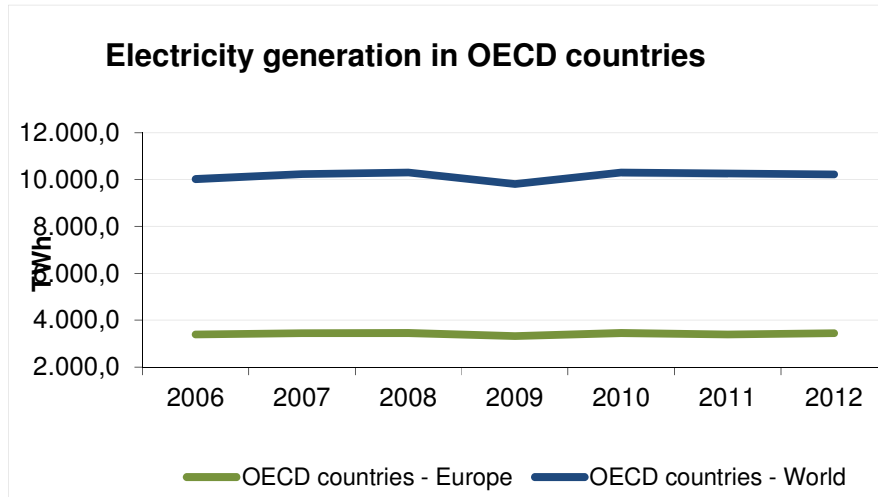


Photovoltaic

Solar panels use the energy of solar radiation and the photoelectric effect. They are the only plants that do not use a generator convert's mechanical energy into electrical energy. The disadvantage of these plants is that they produce only during the day and depend on the intensity of solar radiation.



Production of electricity in the world and in Europe



And now you have to answer the following questions



You have to work in teams – all countries are in all teams

And what situation is in project EUC countries?

The answer to this question is completely up to you.

In the first part of the task, search on the internet how big is the production of electricity in the country allocated to your group and how it contributes to whole different sources.

The information collected add to the table and create a graph that presents your group meeting participants Comenius EUC.

Total production in _____ (fill the allocated land)

Annual production of electricity in this country is: _____

On the production is involved:

Power source	Share [%]
Thermal power stations	
Nuclear power stations	
Hydroelectric power stations	
Wind power stations	
Photovoltaic power stations	



If this country was replaced with thermal and nuclear power plants, wind or solar, how much would they be needed?

The overall performance of nuclear and thermal power plants:

Power of solar panel is 5 kW

Power of wind power is 3000 kW

	The number of required power
Wind power stations	
Photovoltaic power stations	

Energy Future

People are using more and more electrical devices and growing demands for energy in industry. Therefore, researchers are beginning to examine what power source will be able to meet the needs of humanity. One tract is thermonuclear fusion. To become familiar with this technology to locate and process information related to this technology into the presentation.

- The basic principle of fusion
- Cold fusion
- Tokamak
- Fusion's advantages
- Fusion's disadvantages
- Nuclear fusion in Europe
- ITER





