

SIS-3 «GREENENERGY»

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ENERGY FOR LIFE

Energy is a basic necessity of life. The sustenance and quality of life depend on its availability.

Energy - a comprehensive concept, because it is present everywhere.



Energy Sources

Renewable

**natural energy
sources which do not
get used up.**

Non-renewable

**energy sources that
cannot be replaced
and will eventually
run out.**



Non-renewable Energy



Non-renewable energy is the more traditional source of energy and is most commonly known as fossil fuels. Examples of non-renewable energy are:

- Coal
- Oil
- Natural Gas
- Nuclear

Non-renewable sources of energy are much cheaper than renewable sources but are harmful to the environment.



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Renewable Energy (Green Energy)

There are many different forms of renewable energy:

- Wind energy
- Solar energy
- Bioenergy
- Ocean energy
- Hydroelectricity



Renewable Energy

Solar



Uses:

- Solar Power Plant

Wind



Uses:

- Wind Power Plant

Biomass



Uses:

- Biofuels
- Biopower
- Bioproducts

Hydrogen



Uses:

- Fuel Cells

Geothermal



Uses:

- Geothermal Power Plant
- Heat Pumps

Ocean



Uses:

- Tidal Power
- Wave Power
- Thermal

Hydropower



Uses:

- Hydropower Plant

Wind energy



The wind is a clean, free, and readily available renewable energy source. Wind energy is produced by the movement of air (wind) and converted into power for human use. Each day, around the world, wind turbines are capturing the wind's power and converting it to electricity. This source of power generation plays an important role in the world.



Advantages and disadvantages of wind energy

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- unlimited stocks
- a free source of energy
- use does not pose a threat to nature, does not reduce resources, does not have negative consequences for human health

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- instability, instability of the source
- with huge capacities of wind flows, reception and processing are technically complex and ineffective
- noise, vibration during operation
- high cost of equipment and energy

Solar Energy

Solar energy simply means energy that comes from the **sun**. Sun is a powerful source of energy.

Without it, there would have been no life on the Earth. It is renewable, free, widely available and clean for use by many variety of



Advantages and disadvantages of solar energy

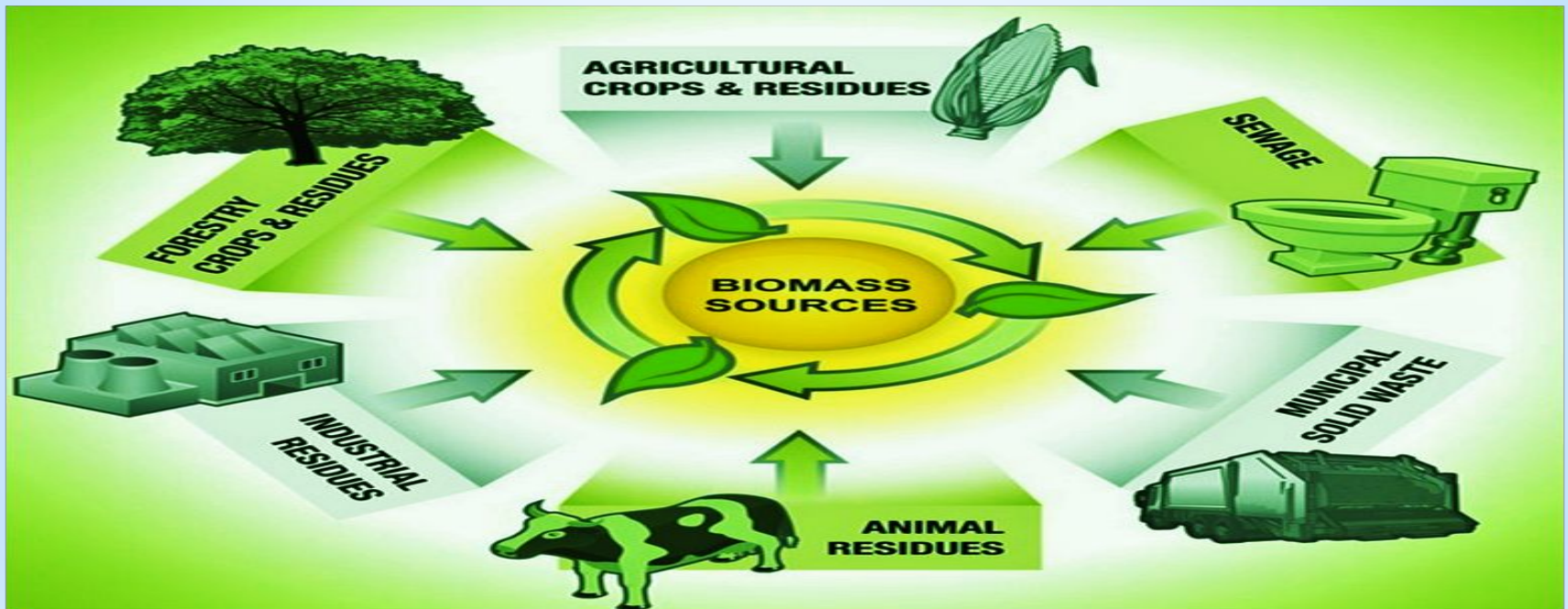
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- Renewability
- Profusion
- Noiselessness
- Innovative technology

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- High cost
- Inconstancy
- Minor environmental pollution
- Low power density

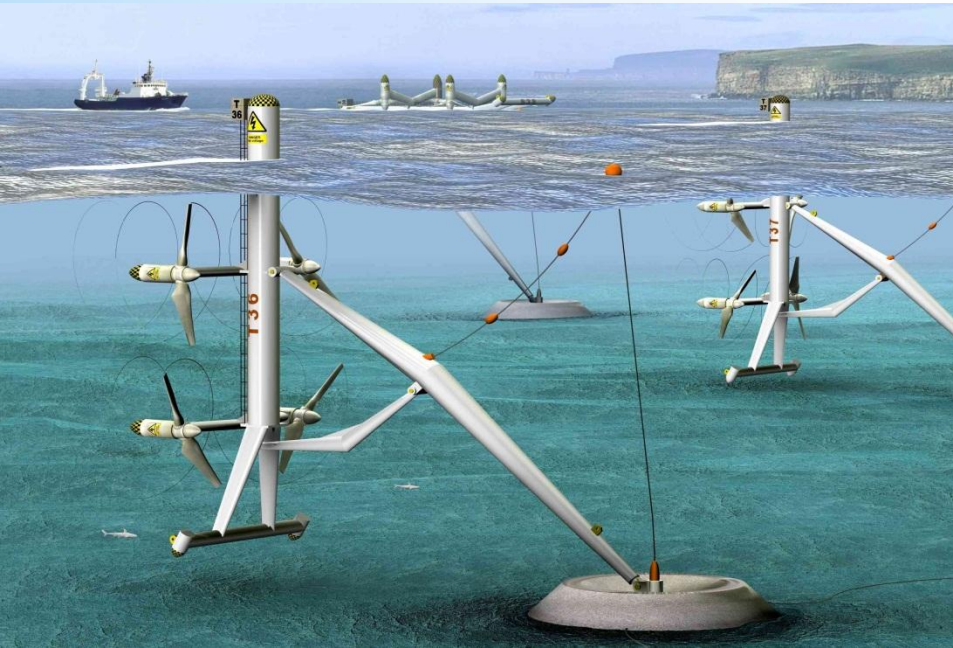
Bioenergy



Bioenergy is energy derived using organic material, especially plant matter, as fuel. The material burned or processed to produce bioenergy is named biomass. Biomass has been an energy source for as long as humans have used wood fires to warm themselves and cook food.

Ocean Energy

Ocean energy uses the power from the sea to create electricity. It uses energy from waves or from tidal currents.



Ocean energy is able to work continuously in almost any weather.

Hydroelectricity

Hydroelectric power was the first and simplest electricity generation technology. A dam is built to trap water, usually in a valley where there is an existing lake. Water is allowed to flow through tunnels in the dam, to turn turbines and thus drive generators. Hydro-electric power stations can produce a great deal of power very cheaply.



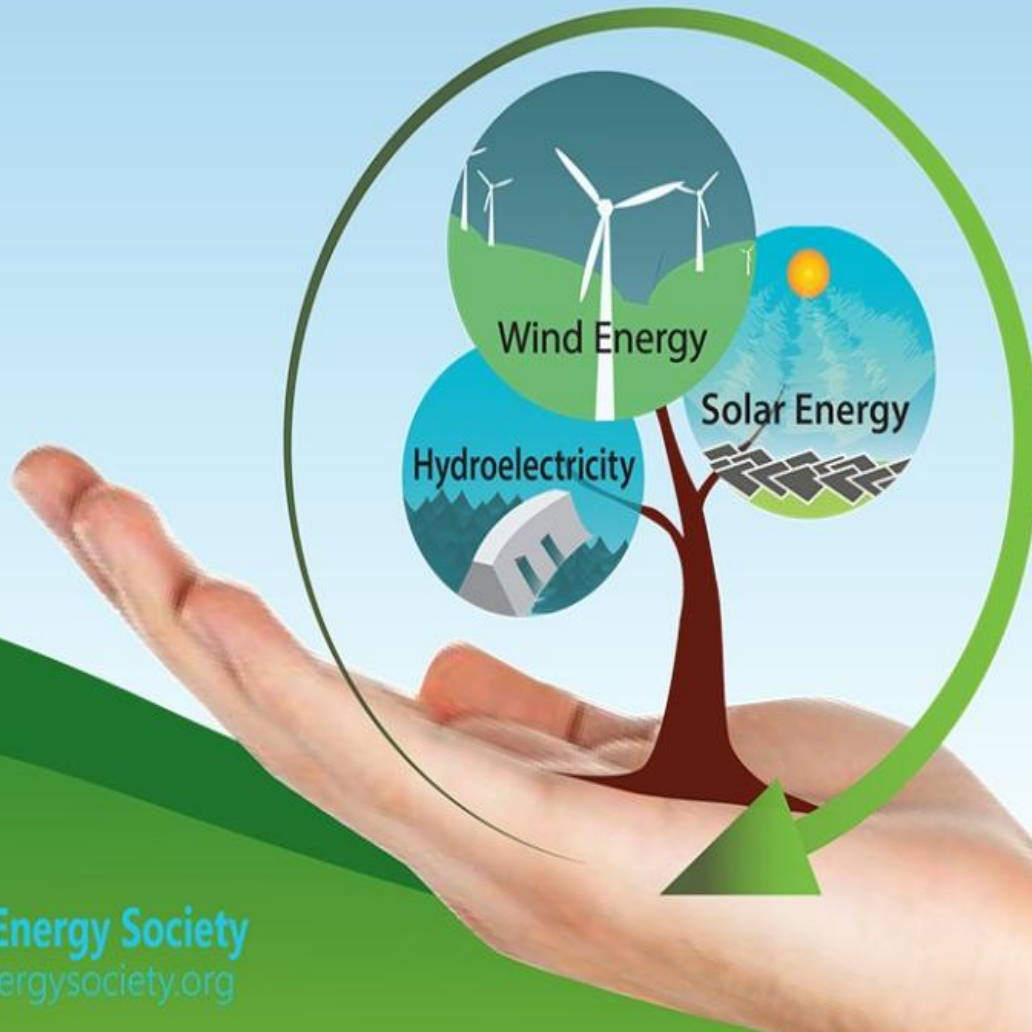
Green energy in Kazakhstan

About 72 % of electricity in Kazakhstan is produced from coal, 12.3 % - from hydro resources, 10.6 % - from gas and 4.9 % – from oil. Thus, the four main types of power plants generate 99.8% of electricity, and alternative sources account for less than 0.2%



Renewable Energy

*"The future of our planet is
in our hands."*



Renewable Energy Society
renewableenergysociety.org

In conclusion, traditional energy resources are not infinite. According to some forecasts, their reserves can be critically reduced even during my life. Therefore, the transition to renewable energy is inevitable.

Thanks for attention