



LEARNING FOR LIFE

Let's Produce Green Energy Recycling Waste!



„There are two magical words that define the way a child relates to the environment. Speaking in parables will not shape a child's behavior, neither will constant advice. It's the way grown-ups interact with the environment that speaks volumes about how they should behave.”

(Steiner, 1994).

What does it mean green energy?



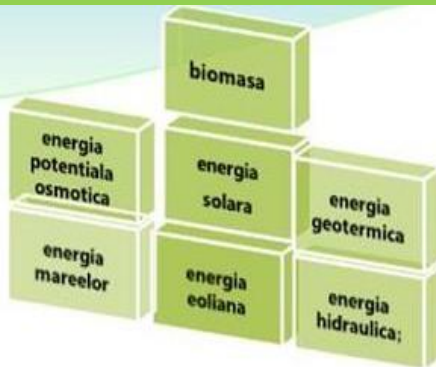
"**Green Energy**" is a term referring to renewable and eco-friendly energy sources..

Renewable energy is, in fact, that energy produced from renewable sources that either regenerate in a short period of time or that virtually inexhaustible.



Half of the energy Romania alots to Sundays comes from renewable sources –a third being wind energy- according to data provided by the constant monitoring of the situation regarding the Natural Energy System.

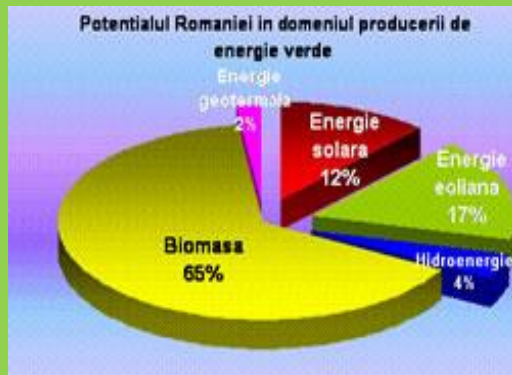
Sursele de
energie
regenerabila:



Classification of green and renewable energy types

Criteria	Renewable energy sources	Exemples
According to origin	Natural	Solar Energy, Wind Power, Hydropower, Fuels
	Artificial	Electric, thermic, mechanical, light energy
Time of exploitation before running out	Exhaustible	Fossil and Nuclear Fuels (uraniu, plutoniu)
	Inexhaustible	Solar Energy, Wind Power, Tidal Energy .
History of Uage	Convențional	Nuclear & Fossil Fuels, Hydro energy
	Unconvențional	Nuclear, solar, wind, wave Energy

Romania is capable of developing production system based on all kinds of renewable energy, depending on the geographical feature of every area. According to several studies carried out in our country, our potential for green energy production is represented by biomass 65%, wind energy 17%, solar energy 12%, hydropower 4%, voltaic and geothermal energy 2% .



Solar Energy is distributed almost evenly all over the Earth, it is eco-friendly and does neither require transport from the source, nor waste management. Solar Energy is captured by way of solar panels. Solar Panels are also known as solar heaters and are used to produce heat or to directly heat up water by capturing a certain part of the solar radiation spectrum.



Solar Energy is virtually inexhaustible. It is the purest form of energy on Earth and it consists of thermic, light and radio radiations emitted by the sun. However, it is rather difficult to capture and store under a certain form such as heat or electricity so that it could be used henceforth.

Wind Energy is a renewable form of energy. At first, wind energy is turned into mechanical energy. It has been used since the dower of time as a way of prompting forward various ships, and later as energy for windmills.



In Romania the investments in wind farms amonts to more than 1.5 million Euros. Nowadays, Romania boasts wind farms with a capacity north of 1000MW, all of them situated in Dobrogea. According to Wind Europe data, wind energy supplies about 12,5% of the total amount of energy produced in Romania, ranking seventh in Europe.

The largest wind farms in the world

Parcul eolian	Capacitatea curentă (MW)	Țara	Note
Alta (Oak Creek-Mojave)	1,320	 Statele Unite ale Americii	[3]
Jaisalmer Wind Park	1,064	 India	[4]
Buffalo Gap Wind Farm	523.3	 Statele Unite ale Americii	[5][6]
Capricorn Ridge Wind Farm	662.5	 Statele Unite ale Americii	[5][6]
Dabancheng Wind Farm	500	 People's Republic of China	[7]
Parcul eolian Fântânele-Cogealac	600	 România	[8]
Fowler Ridge Wind Farm	599.8	 Statele Unite ale Americii	[9]
Horse Hollow Wind Energy Center	735.5	 Statele Unite ale Americii	[5][6]
Meadow Lake Wind Farm	500	 Statele Unite ale Americii	[9]
Panther Creek Wind Farm	458	 Statele Unite ale Americii	[6]
Roscoe Wind Farm	781.5	 Statele Unite ale Americii	[10]
Shepherds Flat Wind Farm	845	 Statele Unite ale Americii	
Sweetwater Wind Farm	585.3	 Statele Unite ale Americii	[5]

Hydropower refers to the mechanical work derived from falling or fast running water. Given the natural water circulation, maintained by solar energy, hydropower is a renewable source of energy.

Various ways of harnessing hydropower:

- Hydropower Plants, built on rivers
- Geothermal Energy droven from geysers
- Tidal Energy, originating in the fluctuating water levels of tides.
- The powerplants using wave energy.



Hydropower Plant Bicaz



Hydropower Plant Porțile de Fier I

Biomass represents the biodegradable part of products, urban waste and commercial, industrial and agricultural toxic waste. It was the first energy source known to man.

From a larger perspective, the biomass is represented by vegetal organic matter, animal residues, as well as microorganisms. To narrow it down to suit our purpose, agricultural biomass represents agricultural side products of home grown



plants: sunflower stems, beet leaves, soy bean sheaths, nut husks, peach or prune seeds and the fecal matter of domestic animals. Apart from the agricultural biomass, we should also consider the residues of the Forest Industry, resulting from forest exploitation.

The energy content of different types of biomass (electric Mwh)

<i>1 t of coal</i>	<i>= 2.5 Mwh</i>
<i>1 t wood pellets</i>	<i>= 1.8 - 2 Mwh</i>
<i>1 t of sawdust</i>	<i>= 1.8 Mwh</i>
<i>1 t coffee remnants</i>	<i>= 1.6 Mwh</i>
<i>1 t organic waste</i>	<i>= 10 Mwh</i>

1 t oil = 2.5 t woods pellets



Bibliography:

- <https://www.ecolife.ro/articole/stiinta/47-sursele-de-energie-neconventionala.html>
- <https://en.wikipedia.org/wiki>
- <https://www.gazetadeagricultura.info/energie-regenerabile>
- https://www.urbadornei.ro/dokumentumok/Informaciok/Biomasa_Ro.pdf
- <https://dantalmaci.wordpress.com/tag/energie-regenerabila/>
- <http://www.transelectrica.ro/web/tel/home>
- http://www.enwin.com/kids/electricity/types_of_energy.cfm

I think we all dreamed, at some point of a greener, cleaner city that should be surrounded by Nature. Well, tending to the environment, by using renewable energy, would probably be the most important step in this direction.



Do you think your city deserves to live healthy?

Change depends on you and your desire to live ecologically!



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