

A Brief History of Bioenergy



OSU EXTENSION
4-H YOUTH DEVELOPMENT

Cornfield: Image by [Albrecht Fietz](#) from [Pixabay](#)



Bioenergy is a form of energy that comes from recently living organic materials- known as biomass.



The prefix BIO means LIFE.

What are some examples of life or living things?
Do you think they could be used for energy?

Key: Image by [OpenClipart-Vectors](#) from [Pixabay](#)
Question Mark: Image by [kropekk_pl](#) from [Pixabay](#)



Humans have used biomass for thousands of years to generate heat and light!

With your group, look at the image cards given to you.
Each card represents a source of biomass that has been used to produce energy throughout history.

★ **Your task is to place these in order from the oldest source we have on record to the newest.**

Go!

Key: Image by [OpenClipart-Vectors](#) from [Pixabay](#)

Forest Residue

Humans have used wood or other forest residue (dried leaves, etc) to produce fire (heat and light) for over 100,000 years!



Campfire Image by [Hamza Ait Omlacho](#) from [Pixabay](#)

Grains/Crops

Sugary crops and grains have been used to produce ethanol, through distillation, since the 1100's. Ethanol can be burned and was used in candles and for cook stoves. It is still used today for heat, light, and fuel purposes.



https://commons.wikimedia.org/wiki/File:Wheat_MET_25-3-152.jpg

Vegetable/Animal Oils

Since the 1200's, different types of fish oils have been recorded as used being for heat and light. In the 1700's whaling became popular and whale oil served as one of the most popular sources of bioenergy until the 1830's when cleaner burning alternatives were introduced.

In Ancient Greece, olive oil and other vegetable oils were also used as heat and light sources.



Whaling: https://commons.wikimedia.org/wiki/File:Charles_Nordhoff,_Whaling_and_fishing,_1856.JPG

Pine Sap

Pine sap, also known as “Naval Stores” was a major industry in the U.S. from the 1700’s to the 1960’s. Pine sap was used in the shipping industry, but it was also used to produce turpentine (through distillation) that was a major source of lamp oil.



Turpentine Old: <https://www.loc.gov/pictures/item/2017748998/>

Algae

Algae is a more newly recognized source of bioenergy. In the 1980's, a federally funded program began to research its use in producing oil for fuels. Due to its quick growth, ability to grow in otherwise uninhabitable places for biomass, and its ability to absorb carbon, research is still being conducted today to make algae a more sustainable bioenergy source.



Algae/Seaweed: Image by [Akerraren Adarrak](#) from [Pixabay](#)



As society has changed, the sources of biomass we use, and how we utilize them for bioenergy, have evolved.

Bioenergy serves a very important role in transportation, the production of heat and electricity, and the creation of bioproducts (such as plastics) that we all use today.



Key: Image by [OpenClipart-Vectors](#) from [Pixabay](#)

Car: Image by [OpenClipart-Vectors](#) from [Pixabay](#)