

## EFFICIENCY OF BIOMASS ENERGY USE

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### Annotatsiya

This article provides information on renewable energy technologies that use biomass energy, a biomass energy generation technology that is one of the alternative energy sources. In addition, the main physical and chemical properties of biomass energy and ways and methods of using it in industry and in the field of agriculture are presented.

**Keywords:** energy, biogas, biomass, ecology, fermentation, photosynthesis, toxic gases, alternative energy, renewable energy.

All the achievements of the current world economy are based on oil, gas, coal and other similar natural fossil resources. But sooner or later, humanity will dig up all the coal in the Earth's crust, extract oil and end up burning gas. Most of the actions in our lives: from moving on the subway to brewing tea in the kitchen, ultimately, are aimed at ending this product of historical progress by burning. The main problem is that these easily accessible energy resources are not renewable. In addition, smoke and toxic gases released from combustible products spoil the air purity. This situation has many negative consequences, especially in large cities.

The world community has long understood and understood the limitations of the amount of fossil resources and the negative impact of their use on the environment. The total transition to renewable energy will allow you to eliminate the problem of future energy shortages. The axial layer of the globe is 1800mlrd t. it consists of dry and wet products. Organic and inorganic products can be obtained as a result of processing using waste from them.

To obtain biomass energy from dry products, a combustion process is required, in which the fermentation process takes place. However, getting biomass from dry products does not work well. The method of obtaining bioenergy from wet products is considered quite effective, in which the moisture required for the fermentation (fermentation) process is high. Of the various organic waste, livestock waste is considered the most significant product, with a content of nitrogen, phosphorus and potassium of 0.32-0.64%. It can be seen from this that without being limited to obtaining a single bioenergy from livestock products, an environmentally friendly mouthpiece can also be extracted.

Currently, biomass energy is the fourth largest renewable energy source in the world, supplying 1,250tonna of conditional fuel per year. Organic waste from livestock (manure) and the food industry is used as raw materials.

The preparation process occurs as a result of anaerobic processing and the gas is released, which consumers can use in place of natural and dilute gas. Each living animal and plant substance retains some form of energy. The energy stored in these animals and plants comes in the form of carbohydrates, including starch, sugar and cellulose. Carbohydrates are formed during photosynthesis. The remains of these plants and animals and the waste products of the organism are collectively called organic matter to the environment. Energy can be produced from organic matter. One way to extract energy from organic matter is to generate biomass energy. Biomass energy is a renewable and sustainable energy source derived from organic matter that can be used to generate electricity and other power types. Common materials that can be used to produce biomass fuels include manure, forest residues, wood waste, mulch, sewage, some crops and some types of waste are included.

Biomass is renewable energy because it contains energy from the sun. Biomass is an organic material made mainly from plants and animals. In the process of photosynthesis, the chlorophyll present in plants absorbs energy from the sun, converting carbon dioxide in the air and water on the ground into carbohydrates. When these plants are burned, the same energy is released into the air captured by the sun. Thus, when these plants and animals are burned, they become carbon dioxide and water. Thus, we can say that biomass is a source of renewable energy, since we can always grow more crops and plants, and waste will always be available. If biomass is produced, this renewable energy source will remain forever. Examples of biomass include plants, crop residues, wood chips, corn, and some types of garbage. Biomass itself contains chemical energy. Thus, when you burn wood, which is biomass fuel, the chemical energy inside is released as heat. It can also be used to generate steam, which can be used to generate electricity. The use of biomass for energy reduces emissions and helps reduce landfills. With the increase in costs, people are trying to turn to more biomass and less fossil fuels. The production of green energy is expected to take many years, due to the constant supply of waste as a result of construction and demolition work, the passage of paper, wood for the preparation of domestic and domestic solid waste.

Vegetable residue	0,330-0,500	50-70
Potato residue	0,280-0,490	60-75
Beet residue	0,400-0,500	85
Dry plants		
Salmon	0,200-0,300	50-60
Hay	0,200-0,300	59
Barley straw	0,290-0,310	59
Corn straw	0,380-0,460	59
Lyon	0,360	59
Beet jam	0,165	59
Sunflower leaf	0,300	59
Brda	0,430-0,490	59
Other species		

Ötjar	0,280-0,630	70
Tree leaf	0,210-0,290	58

From agricultural raw materials: sugar cane, sugar beets, topinambur (ground pear), among others, are also alternative sources of energy. In some countries, liquid fuel by fermentation method from it produces, in particular, ethanol. For example, in Brazil, a large amount of ethyl alcohol is extracted from the plant mass, which is completely satisfying the need for automotive fuel in the country. The raw material required to organize the mass production of ethanol is mainly sugar cane.

Sugarcane is actively involved in the process of photosynthesis and produces more energy compared to other plants at the expense of each hectare of land to be cultivated.

Currently, its production is 8.4 million tons in Brazil and it is 5.6 million tons. The ton corresponds to high-quality gasoline. In the United States, a biohol with up to 10% ethanol is produced from corn (kukuruza) to fuel cars. This biomass seems to help boost global warming. But in fact, this is another way. Plants take carbon dioxide and release oxygen in the air. When these plants disintegrate, they are burned and carbon dioxide is released into the atmosphere. When these crops are replanted, the new plants use the same CO<sub>2</sub> and produce burnt plants. Thus, biomass does not contribute to global warming. However, if plants are not replanted, carbon dioxide (CO<sub>2</sub>) can be released in biomass, which in turn promotes global warming.

Biomass is a renewable energy source for two main reasons: Remnants of forest resources, Mills and timber remains never stop. Proper forest management-most countries have established strict rules for forest management, which means that trees will continue to be plentiful. In addition, everyone needs food, so crops and their remains remain in existence for many years. How does biomass convert to energy?

Biomass power was carbon-free neutral electricity generated from renewable organic waste that could be burned open, dumped in landfills, or left in the forest. Solar energy is transmitted and stored in plants in the form of chemical energy. When plants are cut or die off, wood chips, straw, and other plant matter are delivered to the biogas device. When the biomass is burned, it releases energy in the form of heat. If you have a fireplace in your house, then you are already involved in the use of biomass, since burning wood is a biomass fuel. Biomass plants burn wood or other waste to produce steam. Steam energy is directed through the pipes to start the turbines. Steam is raised to start turbines, which eventually generate electricity or generate heat for homes and industry. In many countries, biomass plants have been built in the villages to provide electricity to the local population. There are waste plants that burn waste, generate electricity, and supply millions of homes with electricity. Energy can also be used by activating wood residues or wood chips left after trees have been cut. See also: What is environmental law: importance and components. Advances in technology, such as combustion engineering and Pollution Control, have led to a reduction in emissions in industrial settings.

compared to emissions from burning fossil fuels (oil, coal and natural gas) in industrial enterprises.

Another great benefit of biomass energy is that it converts harmful waste into useful energy. For example, garbage that fills landfills can be collected to burn and turn into a valuable source of energy. Biomass waste is not harmful carbon dioxide released from biomass is absolutely harmless. Currently, most energy companies have difficulty controlling carbon dioxide emissions. This is a dangerous trend because they can affect the ozone layer, thus leading to increased greenhouse gas exposure, which can lead to climate change and global warming.

Biomass energy is completely natural and has no side effects when used. It is a renewable source and abundant supply since biomass products come from living sources and their life cycle is over, they do not end when there are living beings on Earth and there is someone to convert living elements and waste materials into energy.

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