Biofuel is a renewable source of energy that is derived from recently living organisms or biomass. Biomass is an important resource and some agricultural products are specifically grown to be used as biomass. Corn and soybeans are often used as a source for biomass. Biomass can and is being used for electricity production. Currently 15% of the world's power is generated from biomass.

Biomass types

Solids

There are many forms of solid biomass that are capable of producing energy, such as:

- Wood
- Straw and other dried plants
- Animal waste such as poultry droppings
- Crops such as corn, rice, soybeans, peanuts cotton and sugarcane

Liquids

There are also a number of liquid forms of biomass that can be used as a fuel:

- Bioalcohols
  - Ethanol produced from sugar cane is being used as automotive fuel in Brazil. Ethanol which is produced from corn is being used as a gasoline additive in the United States.
  - Methanol, which is currently produced from natural gas, can also be produced from biomass.
  - Butanol is formed by A.B.E. fermentation (Acetone, Butanol Ethanol) and experimental modifications of the ABE process show potentially high net energy gains with butanol being the only liquid product. Butanol can be burned "straight" in existing gasoline engines (without modification to the engine or car), produces more energy and is less corrosive and less water soluble than ethanol, and can be distributed via existing infrastructures.
- Biologically produced oils or bio-oils can be used in diesel engines :
  - Vegetable oil
  - Waste vegetable oil
  - Biodiesel obtained from animal fats and vegetable oil are directly usable in petroleum diesel engines.
- Oils and gases can be produced from various wastes:
  - Thermal depolymerization can extract methane and oil similar to petroleum from waste.

- Methane and oils are being extracted from landfill wells.

Gaseous

- Bio-methane produced by the natural decay of garbage in landfills and similar installations.
- Wood gas can be extracted from wood and used in petrol engines.
- Hydrogen can be produced in water electrolysis or, less ecologically, by cracking any hydrocarbon fuel in a reformer.
- Gasification, which produces carbon monoxide.

Usage

The most popular place where biomass is used is in home cooking and heating. Burning wood or charcoal for heating a stove or heating a house is a very common practice for people that are trying to create an energy efficient house.

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