Your Name

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Course Number

Date

Title: BioMass energy

Biomass energy is aimed at utilizing the organic matter for the production of energy. This method of energy production can be dated back to prehistoric times when man used fire. It is one of the most imperative parts of the world's energy system, and the production of energy from animal dung, firewood, and charcoal account for about 10% of the basic energy supply amid developing nations. The United States, followed by China, Italy, Germany, and India, are the main countries that are exploring the subject of biomass as renewable energy, as computed by scientific production (Perea-Moreno et al., 3).

Biomass is a renewable source of energy since it is produced from waste timber and waste crop husk-like corn, waste sugarcane stems, that reflects on why is it renewable. It’s because one keeps on growing it. Fact, we have been eating these things for thousands of years, and the method is always the same; it is grown. Biomass is basically organic materials like wood, manure, crops, food leftovers, garden waste, etc. and all the things that can be biologically produced by living organisms such as plants and animals (Klass, 194). Biomass is also a renewable source of energy because that can always be created more rather quickly, unlike fossil fuels, which take thousands of years to form.

How can energy be produced from organic products is a really relevant question in this age of overconsumption of fuels? There are thousands of methods to convert biomass into energy. Only waste should be used for energy since we can use crops to food, fibers, and lumber. When users throw them out, then it can be converted to usable energy (*Biomass and the Environment - U.S. Energy Information Administration (EIA, n.p)*). Some of the methods include burning/incineration, pyrolysis/biochar, and gasification. The last two create hydrocarbon fuels that can be stored and converted to almost any hydrocarbon. Fermentation is also possible but uses a lot more land and takes longer. It's also sensitive to contamination, but create clean methane and is used around the world. All these have carbon content and, when burnt, can generate energy which can be used for various purposes (especially as an alternative fuel source ). Nonetheless, burning is not always a good solution, considering the number of harmful gases being released into the atmosphere. So, if you ask me, the best way of generating energy from biomass is by creating a biogas plant.

A biogas plant takes in dead decaying organic matter and other wasted organic products as input, and by the action of microorganisms and bacteria on them, generate methane gas, which is an excellent fuel. This can be used for providing gas supply to a small locality, and once the biogas plant is full up and running, then it can be used for creating methane gas cylinders for use in cars, etc. Biogas plant as a means for using biomass is a good option because not only one gets fuel, but also, you get excellent quality manure from the waste products after the action of the microorganisms on the organic product. It is a great idea for rural villages that do not have access to gas, electricity, etc. and are suffering from a lack of fertility of the land. It's really all about the cost; most companies will take advantage of the lowest-cost energy unless it's part of their mission statement to do it sustainably. So the future of biomass energy or any alternative energy is really dependent on cost, which I think will start to become more competitive and accessible in the next decade.

Biomass energy is merely making use of the chemical energy already implanted into the organic material by photosynthesis. As such, it can be defined as another form of solar energy. The beauty of biomass reactors is the fact that they can use waste materials that we have traditionally regarded as a problem to be disposed of, rather than a valuable resource to be harvested, and it offers many environmental benefits as well (Heller et al., 1038). The thing to remember is that this is only one part of the solution since trying to use biomass fuel as our main source of energy is fraught with problems (*Biomass Power, Pros & Cons, n.p*). If we rely on this source, we commit ourselves to use land better suited for food production, which would be a mistake. Better to regard it as an important segment of energy planning and management that turns a waste product into a valued resource that is useful for certain applications that other techniques cannot easily handle.

However, that biomass is not an emissions-free energy source, there are greenhouse gas emissions during its combustion, although they are much lower than those of coal. The main issue with the conversion of biomass (e.g., wood) to electricity is the supply chain. Often, the economics of forestry profits, transportation, and related processing means the biomass is a more costly material than natural gas, coal, etc. However, in some markets (Europe and United Kingdom, S. Korea, Japan, etc.), the sales price for the biomass power is such that the supply chain economics rewards entities along with it (forestry landowners, transportation companies, etc.). Without these incentives and subsidies as well as market directives, the supply chain does not reward the capital invested in it.

I believe energy from biomass holds an insane promise. There is a catch to it, though. Energy derived from biomass is not as 'rich' when you compare it to fossil fuels, so production will need to be two to three times more than what is required for fossil fuels. However, we have countries like Saudi Arabia establishing facilities for harvesting biodiesel from Algal systems and coming from an OPEC giant that is quite some news.

**Works Cited**

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