EDITORIAL

Biomass Utilization Post Rio +20

"Biomass" is the term that is used for biological material (carbon based with organic molecules usually containing hydrogen, oxygen, nitrogen and others) from living or recently living organisms. Usually biomass refers to plants or plant-derived materials but examples of biomass material include energy crops, agricultural residues and waste. Biomass is a renewable energy source where it is used directly or indirectly (biofuel) to produce energy through thermal, chemical or biochemical conversion. It is considered one of the alternative energy sources for sustainable development. In June 2012, the United Nations Conference on Sustainable Development was held, 20 years after the Earth summit was held also in Rio de Janeiro, Brazil, earning it the abbreviation Rio+20. The theme for Rio+20 was green economy in the context of sustainable development and poverty eradication and the institutional framework for sustainable development with the objective of renewed political commitment for sustainable development. In this conference, the role of biomass utilization in sustainable development was not addressed directly but through the promotion of increased use of renewable energy sources and other low-emission technologies, the more efficient use of energy, greater reliance on advanced energy technologies, including cleaner fossil fuel technologies, and the sustainable use of traditional energy resources.

With the post Rio+20 stand on increased use of renewable energy sources; it is natural to expect that this would mean an increase in the usage of biomass. One of the leaders in this endeavor is the European Union where plans to promote the replacement of fossil fuels with biomass under a bio-economy policy is evident. Some may argue that biomass derived energy may release as much carbon dioxide as fossil fuels but the biomass burning does not release "new carbon" into the atmosphere while the carbon dioxide released from fossil fuels are from carbon that were fixated millions of years ago in the hydrocarbon of fossil fuels. While every time a new plant grows, carbon dioxide is actually removed from the atmosphere, thus, biomass would be able to reduce the carbon dioxide that is released into the air as the net emission of carbon dioxide will be zero as long as plants continue to be replenished for biomass energy purposes. However, as soon as the plans were announced, there have been negative feedbacks on this plan as reports show that this plan can lead to land grabs, the destruction of rainforests, and severe food shortages where land is used to grow fuel instead of food. Another point to note would be that these problems can be reduced if the biomass used would only utilize non-food and non-forest based biomass materials that already exist such as waste, landfill gasses, biogas, and others.

In Rio+20, commitments for action to make sustainable energy for all a reality to help eradicate poverty, lead to sustainable development and global prosperity while maintaining the healthy functioning of the Earth's ecosystems. With the fear of food security, another stakeholder in biomass utilization, The Global Bioenergy Partnership, was present at Rio+20 to promote the transition away from the unsustainable, traditional ways of deriving energy from biomass and towards the sustainable production and use of

modern bioenergy. The biomass utilization in small and local communities would provide a clean and affordable energy access as a prerequisite for sustainable development. Instead of using traditional biomass method such as burning wood, biofuel and biogas from agricultural waste is highly recommended an encouraged. Examples of biomass projects include power plants utilizing sugar cane bagasse and wood waste, bio gasification plants from waste, energy generated from landfill gas, bioethanol production from algae and many more.

The post Rio+20 effect on biomass utilization would also be from the recognition made that it is important to promote incentives in favor of, and removing disincentives to, energy efficiency, and the diversification of the energy mix, including promoting research and development in all countries, including developing countries. This would mean that disincentives to energy efficiency such as fossil fuel subsidy should be removed and there should be an increase in the incentive instead for renewable energy in general, which includes biomass. Studies have shown that biomass utilization for energy is a very sustainable and environmental friendly given that it is conducted in a sustainable size and scale locally for communities. If it is utilized in a large scale, it could threaten food security and also cause climate change.

Overall, although biomass is just one of the options for efforts and interest in renewable energy from Rio+20, it has its benefit and also detrimental effects if it is not being implemented properly. However, for most countries especially developing countries, from the options available for renewable energy, biomass would be one of the most cost effective options available. If cost was not a problem, a more sustainable and renewable energy option might be to go instead to community-level solar, wind, hydro and tidal energy.

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