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BIOMASS CONVERSION INTO ENERGY: TECHNOLOGICAL, ECONOMICAL AND SOCIAL IMPACTS

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In the current climate of several global crises, namely, climate change, finances, food shortage and energy, the impact of the biomass conversion to fine chemicals and biofuels took the concept of biorefinery. This process provides unique opportunities for innovation via product substitution, new feedstock generation, alternative fuels, utilizing biomass or waste as a new resource. Large-scale production of biofuels from crops requires large land areas, so liquid biofuels can only replace fossil fuels to a very limited extent. The factors influencing the biofuels development are the oil prices, the crop and fuel markets, the land availability and of course the governmental policies on all above. The environmental impacts from the use of biofuels has been detected and largely discussed: reduction of fossil energy use and greenhouse gas emissions, are the obvious effects on the first side. Environmental sustainability should be an unnegotiable factor. Sustainability principles also apply in the financial and social levels. In the longer term, biofuel production could revitalize the agriculture sector and alleviate poverty by raising rural incomes. Establishing the bio economy concept, a great potential becomes achievable, it can maintain and create economic growth and jobs, reduce fossil fuel dependence and improve the economic and environmental sustainability of primary production and processing industries. If the potential of modern biotechnology expands, lateral issues like regulatory frames, harmonized legislation, public perceptions and communications, ethical or moral issues are becoming more demanding and requiring. In this whole new context, obtaining the full benefits of the bio economy will require purposive goal-oriented policy both by governments but also by leading firms, to put in place the structural conditions, to obtain regional and international agreements and to develop mechanisms to ensure that policy can flexibly adapt to new opportunities.

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