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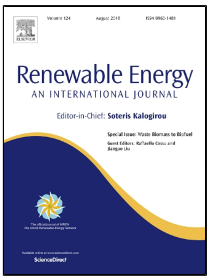

Analysis of Bioenergy Technologies Development based on Life Cycle and Adaptation Trends

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Analysis of Bioenergy Technologies Development based on Life Cycle and Adaptation Trends

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Abstract

Energy has a strategic role in economic and social development of the countries. Therefore, security of energy supply is one of the main concerns of the governments. Due to the environmental effects, limitations, as well as fluctuations of the fossil fuels, utilization of replacement energies such as renewable energy sources is one of the main policies in order to overcome to the energy concerns. Among renewable energy sources, bioenergy and its related technologies is very important for researchers and policy makers. Although different bioenergy technologies have been developed, understanding the market and commercial potentials of each technology is very important. To respond, assessment of different bioenergy technologies would be the best solution, because it evaluates both technical and market acceptance of a technology. This article is to analyze diffusion and adaptation of bioenergy energy technologies based on a technology assessment method, Hype cycle diagram. The hype cycle diagram combines technologies life-cycle and adaptation of a technology. First, the main bioenergy technologies are discussed. Afterwards, the diffusion diagram of each technology is drawn based on life cycle analysis and patent registrations. Next, the adaptation of each technology is investigated. Finally, by combination of both diagrams for each technology, the situation and future of the bioenergy technologies will be discussed.

Keywords: Energy, Bioenergy, Bioenergy technlogies, Hype diagram

1. Introduction