



“Ocean, Forest & Field – the Bioenergy Playground”

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Sustaining Civilization Under-the-Cover Playground

Sustainability means leaving our children and future generations a planet at least as rich as we live in today, and requires maintaining fully functional and healthy natural environment, which basically forms the foundation for our civilization. Due to the population increase, in reality, sustainability is a moving target; therefore, more resources will be required to maintain a healthy and functional status. Here is a good place to introduce the concept of integrated energy management. According to this concept, a series of options need to be employed, and the range will be determined locally. The sources of energy will have to consider both renewable and nonrenewable sources. With the integrated energy management concept, we would be able to provide diverse and reliable sources of energy including more local and decentralized production of energy, considering energy efficiency and conservation measures, protect our local or global environments, and make sure that our future generations live in a healthy and functional environment with rich enough resources. Bioenergy is expected to have a major share in local and global energy mixtures. Microalgae and lignocellulosic feedstock (non-food) alternatives will seem to provide more sustainable solutions for energy generation and use in the future. Especially, considering the productivity levels and other benefits within fully enriching cycles, microalgae-based biofuels are expected to be the key contributors of both local and global sustainable energy development as they fully and truly care about the four sacred elements: the earth, air, water and fire (meaning energy).