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Global bioenergy: problems and prospects

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Abstract: This paper explores the future global potential for bioenergy. We use energy analysis, and more generally climate change effects, as our criteria for evaluation. Since widespread use of new bioenergy is probably decades away, our evaluation attempts to take into account likely future conditions. Previous research displays large variations in estimates of both energy ratio and technical potential. We find that some feedstocks for bioenergy are already attractive from both a monetary and climate change perspective. But for energy plantations, water availability, rather than land availability, will drastically limit the scope for energy crops, and thus for bioenergy overall.

Keywords: bioenergy potential; carbon cycle; climate change analysis; electricity generation; energy analysis; earth system analysis; future uncertainty; transport fuels.

Reference to this paper should be made as follows:

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