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Abstract

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Abstract: Although challenges like global climate change and oil depletion will increasingly drive fuel selection, increasing bioenergy use is only one of many possible responses to these problems. Present biomass liquid fuels are almost all derived from food crops, but their potential for further expansion is limited. Any major expansion of biomass liquid fuels will require use of the more abundant cellulosic feedstocks, but as yet no process for conversion of cellulose to liquids is commercial, and future costs are uncertain. Further, transport is the most important application of biomass liquid fuels, but it is not clear what fuels transport will require in the long term. Given these uncertainties facing biomass liquid fuels, researchers must continue to explore diverse options.

Keywords: biodiesel; bio-oil; cellulosic alcohol; corn ethanol; bioenergy electricity generation; global climate change; hydrogen fuel; liquid bioenergy fuels; uncertainty.

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