

Lignocellulosic residues for production of electricity, biogas or second generation biofuel: A case study of technical and sustainable potential of rice straw in Mali - DTU Orbit (09/11/2017)

Lignocellulosic residues for production of electricity, biogas or second generation biofuel: A case study of technical and sustainable potential of rice straw in Mali

Biomass from agricultural residues, especially lignocellulosic biomass, is not only seen as a sustainable biomass source for the production of electricity, but increasingly as a resource for the production of biogas and second generation biofuel in developing countries. Based on empirical research in an irrigated rice-growing area, Office du Niger, in Mali, this article builds scenarios for the sustainable potential of rice straw. The paper concludes that there is great uncertainty regarding the size of the sustainable resources of rice straw available for energy, but that the most likely scenario estimates a resource of about 120,000 t, which would permit up to three 5 MWel rice straw-fuelled power plants. Based on the findings from the empirical studies, the article further suggests that recently published research on the potential of rice straw in a number of African countries seems first to underestimate the uncertainty of resource assessments, and secondly to overestimate the resources available for energy production, mainly due to optimistic residue-to-product ratios and availability factors. © 2016 Elsevier Ltd. All rights reserved.

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