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Quality of data for estimating GHG emissions in biofuel regulations isunknown: A review of default values related to sugarcane and corn ethanol

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ABSTRACT

European and United States' (U.S.) regulatory schemes mandate the use of biofuels based on estimates oflife cycle GHG emissions that indicate their environmental superiority compared with conventional fuels.This paper analyzes the quality of the activity data used in calculating these estimates for Braziliansugarcane and U.S. corn ethanol, in terms of completeness, reliability, and transparency. Thefindingsdemonstrate that it is impossible to determine the completeness of the data because the regulation'stexts and related documents, and their sources fail to provide information on the representativeness ororigins of the data. Moreover, there is no transparency about the sample from which data is extracted. Toobtain this information it is necessary to review the literary sources referenced in the regulation'sdocuments. Among the 37 sources of data examined in this analysis, 23 are no longer available, and only3 sources contain information allowing for the characterization of the adequacy of the sample. Inaddition, none of the data items analyzed were subject to a verification process. Thesefindings highlightthe urgent need to modify biofuel regulation to set minimum standards for data quality and the reportingof data sources, paying particular attention to default activity data.

Keywords:Biofuel regulation; GHG emission; LCA data quality; Activity data; Brazilian sugarcane etanol; U.S. corn etanol.