

Frontier production function and cost efficiency empirical analysis of bioenergy industry in EU28 region

ABSTRACT

Over the last few years concerns have enhanced about the bioenergy industry as main source for renewable and sustainable energy in many countries. These concerns have been major magnitude for countries with joint green energy legislation such as European Union (EU28) countries. A significant aspect to be considered when selecting a provided bioenergy is the efficiency involved in its production. In this context, the current study analyzes the cost efficiency components in bioenergy industry in EU28 between 1990 and 2013. To this end, parametric and non-parametric frontier models are applied, where both are particularly appropriate in this special context due to their treatment of undesirable outputs. Results are presenting equal means for cost (economic) efficiency in developing and developed countries. Allocative (price) efficiency in developing countries is higher in compare with the one developed countries. While technical efficiency mean presenting higher value in developed countries in compare with developing ones.

Keyword: Bioenergy industry; Technical efficiency; EU28 region; Energy; Source