Assessment of the energy utilization of industrial residual wood in the context of isolated geographical regions.

Abstract

It was assessed the use of the residual biomass coming from logging as a source for generation of energy. To do so, it was carried out a study of localization, quantification and physico-chemical characterization of this residual biomass. The process of localization and sampling was developed on the basis of the implementation of a statistical methodology, which allowed to reliably assure a production of 1177 Ton/year of residual biomass, in a heterogeneous exploitation process in biomass species and their production methods. The hypothetical consideration of a technological setting for a thermochemical utilization of the residual biomass for energy purposes, in combination with a Life Cycle Assessment (LCA), allowed to determine a capability of sustainable energy coverage of 1126 dwellings in the city of Quibdó. This city has infrastructure and social characteristics in common with many regions of Colombia and the planet. The assessment methodology employed can be used as a basic tool for the development of preliminary studies.