

TECHNO-ECONOMICAL ANALYSIS OF WOOD PELLET PRODUCTION FOR U.S. MANUFACTURERS

Adrian Pirraglia, Ronalds Gonzalez, Daniel Saloni

Abstract

Many companies in the U.S. are entering the wood pellets market due to the increasing demand for woody biomass utilization for energy purposes. Despite a 200% increase in wood pellet production, it is difficult to obtain reliable information from the research community regarding the technical requirements, and market trends for wood pellets. Based on comprehensive data, a techno-economical model for the determination of production costs for wood pellet production (with sell strategy based on bagged product) was developed, considering various technical and financial factors that affect pellet production. Outcomes of the model show that wood pellet production is profitable for U.S. manufacturers and distributors/retailers. Sensitivity analyses were performed, showing that the NPV and IRR are sensitive to changes to the cost of biomass and labor. In addition, changes in market size also affect the NPV and IRR of the project, but not as significantly as changes in the cost of biomass and labor. Additional findings indicate that increasing the plant size especially inc