

Biomass fuel feedstock guidelines to control variability

Jeff Mills
Senior Project Manager
Evergreen Engineering Inc.
Eugene, Oregon USA

With the explosive growth in interest in biomass energy the fundamentals of resource development, material handling and process development must be re-visited, updated where necessary, and fully utilized to assure successful processes and projects. Lessons learned from past commercial biomass energy projects provide new experience to aid in this process.

Application of these fundamentals, via updated project development guidelines, will help assure that new bioenergy facilities will effectively utilize their biomass feedstocks throughout the life of the enterprise.

Our first step is to increase our understanding of why many biomass projects struggle to achieve commercial success, or fail outright. One principle cause is greater-than-expected variability in the physical properties (density, fiber type, composition, etc.) of the biomass feed stocks, or significant differences in the actual (mean) properties of the feedstocks versus what was planned. Because these feedstock variabilities were unforeseen, these projects were unable to achieve, or delayed in achieving, commercially viable production rates. Understanding the causes of unplanned feedstock properties allows development of improved project development guidelines.

The updated guidelines will focus on preventing unforeseen biomass feedstock variability. They will be presented as key questions which should be asked and answered during project development and implementation.

These questions, and their answers, provide the starting point for determining the long term expectations for variability in physical properties, price and quality of the biomass feedstock(s). They will also help to assure that provisions are made in facility design to accommodate current and future needs.