Biomass supply cost improvements through least cost formulation

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Biomass quality specifications have a high impact on the economic viability of biofuel conversion technologies. Discovery of low cost or "least cost" biomass feedstock formulations will lead to an overall higher quality and lower cost feedstock being fed into the reactor throat of a conversion facility. Raw biomass standing in the field does not qualify as a feedstock. It is aerobically unstable, high in moisture, and requires certain upgrades to make it compatible with conversion processes. Raw biomass is also highly variable from year to year and even within a single field. The Least Cost Formulation Strategy combines farm gate and landing price assumptions with quality specifications (obtained from industry operations or research data, some found in INL's Biomass R&D Library), to analyze projected biomass quantities at expected market driven costs in order to investigate formulated or "blended" feedstocks. Feedstock least-cost formulation allows a conversion facility to operate at the lower end of the supply-and-demand cost curves by using less of any one feedstock and blending to obtain the larger quantities needed. This strategy also provides a conversion facility the flexibility to create an ideal feedstock for their specific processed based on all resources located in the region of operation.