

Bioenergy Densification

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Poster

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A densified and granulated biomass (pellets) has a bulk density of 500-700 kg/m³, similar to that of grains. The high density combined with flowing characteristics makes storage and handling of biomass safe and economical especially for long distance transport. But pelletization is an expensive and energy intensive operation especially the high temperature drying step. The objective of our research program is to make biomass densification a low cost and energy efficient process so it can compete with fossil fuels. Wood pellet production is an emerging industry in BC and Canada. The specific objectives of this proposal to: (1) develop a database on composition and physical properties of feedstock, varied by source, age, contaminants, and bark/needle inclusion, specifically for pellet production; and (2) to optimize process variables with respect to cost, quality of pellets, and energy input. The approach is planned around detailed laboratory solid biomass densification studies and mathematical modeling.